CLAIMS.

What is claimed is within sets of two screws used for power transmission, with the following basic features:

1- The pair of screws constitute a set working with conjugate action.
Hand of helix are opposite for both parts.
Thread pitches and pitch diameters of the two parts of the set, are in direct proportion. The improvement is that the contact between both parts is made as wide as possible , as seen in the plane of rotation, by means of giving the thread profile of the generated part, such shape as for to touch the helical line of the generator part, from the line of centers, on one side of the line of centers, continuously until the outermost point of the thread. When the helical line contacts the other flank of the thread, it is when the transmission is reversed, the side of thread in contact with the helical line, in respect to the line of centers, is opposite.

2- In power screws as described in claim 1, sets where both parts have a generator helical line, and a generated contact surface, where the improvement is that both contact surfaces are built in such a way that each one is located on one side of the line of centers, giving the engagement contact along all of the possible length of the intersection of the bodies of both parts, as seen on the plane of rotation. When the engagement rotates in the other direction, both sides of the contact are switched. So, the engagement still works with the full length on the plane of rotation.

3- In power screws as described in claims 1 or 2, characterized because the matting screws are parallel.

4- In power screws as described in claims 1 or 2, characterized because the matting screws are coplanar, either parallel or not.

5- In power screws as described in claims 1 or 2, characterized because the matting screws are perpendicular and coplanar

6- In power screws as described in claims 1 or 2, characterized because the matting screws are perpendicular but not coplanar.

7- In power screws as described in claims 1 or 2, characterized because the matting screws are neither parallel, nor perpendicular,

8- In power screws as described in claims 1 or 2, characterized because the generating helical has a diameter bigger than the pitch diameter. In this engagements, the contact surface is located in the radii range from the bottom of the thread, until the pitch diameter.

9- In power screws as described in claims 1 or 2, where the improvement is that the generator helical is not a single helical line, but a solid helical with a curved cross section. The contact surface of the generated part is then modified, and the engagement acquires improved contact conditions.

10- In power screws as described in claim 8, where the improvement is that the generator helical is not s single helical line, but a solid helical with a curved cross section. The contact surface of the generated part is then modified, and the engagement acquires improved contact conditions.

11- In power screws as described in claims 1 or 2, where the improvement is obtained building different contact lengths on each flank of the thread, thus enabling the construction of asymmetrical thread profiles.

12- In power screws as described in claims 1 or 2,where the improvement is obtained increasing the height of the thread, either below or below and above the zone where the contact surfaces are built. This is accomplished by means of taking material from the core of the screw, and adding material above the exterior zone of the novolute. The thread height increase below the contact surface, enables the increase in its thickness, which improves the load carrying capacity of the set, without increasing its size. The thread height increase above the contact zone, increases the load capacity of the set, as the stresses are distributed over a wider length of the thread.

13- In power screws as described in claims 1 or 2, where the improvement is obtained building different thread thickness for each part, thus optimizing the overall size of the transmission.

14- In power screws as described in claims 1 or 2, where the improvement is obtained with variable pitch of the threads. This feature is of value while building engagements with non parallel shafts.

15- In power screws as described in claims 1 or 2, where the improvement is obtained with variable thread height of the threads.

This feature is of value while building engagements with non parallel shafts.

16- In power screws as described in claims 1 and 10 or 2 and 10, a finishing process where the roughly built set is put to work mounted with the design relative position of the parts, and is lubricated with a bath of liquid containing abrasive particles. The intrinsic features of the wide contact between the matting parts, leads to the generation of very accurate surfaces characterized by the agreement with the features described in claims 1 and 10 or 2 and 10.